

EPA - NEW ENGLAND'S REVIEW OF MASSACHUSETTS 2010 SECTION 303(d) LIST

I. INTRODUCTION

Section 303(d) of the Clean Water Act (CWA or the Act) and the implementing regulations at 40 CFR 130.7 require states to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and to prioritize and schedule them for the development of a total maximum daily load (TMDL). A TMDL establishes the maximum amount of a pollutant that may be introduced into a water body and still ensure attainment and maintenance of water quality standards. Furthermore, a TMDL must also allocate that acceptable pollutant load among all potential sources.

EPA has conducted a complete review of Massachusetts' 2010 §303(d) list and supporting documentation and information and, based on this review, EPA has determined that Massachusetts' list of water quality limited segments (WQLSs) still requiring total maximum daily loads (TMDLs) meets the requirements of §303(d) of the Clean Water Act and EPA's implementing regulations. Therefore, by this order, EPA hereby approves Massachusetts' 2010 §303(d) list, which was submitted as part of the final *Massachusetts Year 2010 Integrated List of Waters: Final listing of the condition of Massachusetts' waters pursuant to Sections 305(b), 314, and 303(d) of the Clean Water Act* (Integrated List). Massachusetts' final 2010 §303(d) list was originally submitted to EPA on December 30, 2010 and, on November 14, 2011, Massachusetts submitted one final revision to its December 30, 2010 submission.

Massachusetts formulated its list utilizing EPA's May 5, 2009 memorandum on *Information Concerning 2010 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions*. The 2010 memorandum recommended that the states also rely upon EPA earlier guidance memoranda entitled *Information concerning 2008 Clean Water Act Section 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions* (October 12, 2006) and *Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act* (July 29, 2006) (<http://www.epa.gov/owow/tmdl/guidance.html>).

Thus, waters listed by Massachusetts in Category 5 (as defined below) represent the Commonwealth's §303(d) list, which EPA is required to review and approve or disapprove. The remaining four categories, into which water segments were placed by the Commonwealth, are submitted in fulfillment of the requirements under §305(b) of the CWA. The integrated listing format allows states to provide the status of all assessed waters in a single multi-part list. States choosing this option may list each water body or segment thereof in one of five of the following categories:

- 1) All designated uses are supported, no use is threatened;
- 2) Available data and/or information indicate that some, but not all of the designated uses are supported;

- 3) There is insufficient available data and/or information to make a use support determination;
- 4) Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed because;
 - 4a) a state-developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination;
 - 4b) other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time; or
 - 4c) the non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant; and
- 5) Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

The Integrated List presents the individual categories of Massachusetts' waters for the 2010 CWA listing cycle along with pertinent supporting documentation on how the lists were derived. For 2010, the Commonwealth has placed 2,166 water body segments in one of the five reporting categories listed above. An overview of the Massachusetts Water Quality Management Program is provided along with a brief description of the Massachusetts Surface Water Quality Standards (WQS). Finally, the methodology employed for assessing and listing the waters is summarized for each of the uses designated in the WQS.

The purpose of this review document is to describe the rationale for EPA's approval of Massachusetts' 2010 §303(d) list. The following sections identify key elements to be included in the list submittal based on the CWA and EPA regulations (see 40 CFR §130.7). EPA's review of Massachusetts' §303(d) list and related information is based on an analysis of whether Massachusetts reasonably considered existing and readily available water quality-related data and information, and reasonably identified waters required to be listed.

II. STATUTORY AND REGULATORY BACKGROUND

Identification of Water Quality Limited Segments for Inclusion on the Section 303(d) List

Section 303(d)(1) of the Act directs states to identify those waters within their jurisdiction for which effluent limitations required by §301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The §303(d) listing requirements apply to waters impaired by point and/or non-point sources, pursuant to EPA's long-standing interpretation of §303(d).

EPA regulations provide that states do not need to list waters where the following controls are adequate to implement applicable water quality standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by federal, state or local authority, and (3) other pollution control requirements required by state, local or federal authority. See 40 CFR §130.7(b)(1).

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing §303(d) lists, states are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting, or not meeting, designated uses, or as threatened, in the state's most recent §305(b) report; (2) waters for which dilution calculations or predictive modeling indicate non-attainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any §319 non-point assessment submitted to EPA. See 40 CFR §130.7 (b)(5). In addition to these minimum categories, states are required to consider any other data and information that is existing and readily available. EPA's *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* describes categories of water quality-related data and information that may be existing and readily available. While states are required to evaluate all existing and readily available water quality-related data and information, states may decide to rely, or not rely, on particular data or information in determining whether to list particular waters.

In addition to requiring states to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR §130.7(b)(6) require states to include as a part of their submissions to EPA, documentation to support decisions to rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; (3) a rationale for any decision to not use any existing and readily available data and information for waters described in 130.7(b)(5); and (4) any other reasonable information requested by the Region.

Priority Ranking

EPA regulations codify and interpret the requirement in §303(d)(1)(A) of the Act that states establish a priority ranking for listed waters. The regulations at 40 CFR §130.7(b)(4) require states to prioritize waters on their §303(d) lists for TMDL development, and also to identify those water quality limited segments (WQLSs) targeted for TMDL development in the next two years. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See §303(d)(1)(A). As long as these factors are taken into account, the Act provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitat, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities. See 57 Fed. Reg. 33040, 33044-45 (July 24, 1992).

III. REVIEW OF MASSACHUSETTS' SECTION 303(d) SUBMISSION

EPA New England reviewed Massachusetts' Final 2010 §303(d) list dated December, 2010. The submittal includes the components identified below.

1. Massachusetts Year 2010 Integrated List of Waters: Final listing of the condition of Massachusetts' waters pursuant to Sections 305(b), 314, and 303(d) of the Clean Water Act
 - a. Introduction
 - b. Water Resources of Massachusetts
 - c. Costs and Benefits of Clean Water
 - d. Key Elements of the Massachusetts Water Quality Management Program
 - i. Watershed-based Monitoring, Assessment and Implementation
 - ii. Total Maximum Daily Load (TMDL) Program
 - iii. Wastewater Discharge Permitting and Stormwater Management Program
 - iv. The Water Management Act
 - v. Nonpoint Source Program
 - vi. Clean Water State Revolving Fund (SRF)
 - e. Massachusetts Wetlands Protection and Assessment Programs
 - i. Wetlands Regulatory Program
 - ii. Wetlands Loss and Wetland Information Resource (WIRE) Project
 - iii. Wetlands Monitoring and Assessment Strategy
 - f. The Massachusetts Surface Water Quality Standards
 - g. General Approach to Assessing Massachusetts' Waters
 - i. Sources of Information
 - ii. Assessment Procedure
 - iii. Assessment Documentation
 - h. Development of the 2010 Integrated List
 - i. List Categories 1 – 4
 - ii. List Category 5 – The 303(d) List of Impaired Waters
 - iii. Biological Assessments
 - iv. Fish Consumption Advisories
 - v. Waters Impaired by Mercury
 - vi. Predictive Models and Evaluated Information
 - vii. Shared Waters
 - viii. Prioritizing Waters for TMDL Development
 - i. Bibliography
 - j. Category 1 Waters – “Waters attaining all designated uses”
 - k. Category 2 Waters – “Attaining some uses; other uses not assessed”
 - l. Category 3 Waters – “No uses assessed”
 - m. Category 4a Waters – “TMDL is completed”
 - n. Category 4c Waters – “Impairment not caused by a pollutant”
 - o. Category 5 Waters – “Waters requiring a TMDL”
 - p. Appendix 1 – Assessment Units and Integrated List categories by major watershed

- q. Appendix 2 – Category 5 and 4c Impairments *added* to the 2010 Integrated List
- r. Appendix 3 – 303(d) Impairments *removed* from the 2010 Integrated List
- 2. Massachusetts Year 2010 Integrated List of Waters: Responses to public comments pertaining to the proposed listing of the condition of Massachusetts’ waters pursuant to Sections 303(d) and 305(b) of the Clean Water Act

Public Review of Massachusetts’ 2010 Section 303(d) List

Massachusetts conducted a public participation process in which it provided the public the opportunity to review and comment on the 2010 draft CWA §303(d) list. On May 5, 2010, the *Proposed Massachusetts Year 2010 Integrated List of Waters* was noticed in the *Massachusetts Environmental Monitor*. It was also posted on the Massachusetts Department of Environmental Protection’s (MassDEP) website and provided directly to over fifty different watershed associations and other public interest groups. The document was also available at MassDEP’s Worcester office. The public comment period ended on June 11, 2010.

MassDEP received a total of eleven comment letters on the Proposed Massachusetts Year 2010 Integrated List of Waters, including comments from EPA Region 1 on the §303(d) list. MassDEP revised the list based on comments received during the public comment period. EPA has reviewed Massachusetts’ responses to the public comments received related to the §303(d) list decisions and concludes that Massachusetts has adequately responded to the comments.

IV. ANALYSIS OF MASSACHUSETTS’ SUBMISSION

EPA has determined that Massachusetts’ 2010 §303(d) submittal addresses each of the requirements specified in §303(d) of the CWA and EPA’s implementing regulations 40 CFR §130.7. Specifically, Massachusetts’ 2010 §303(d) list identifies all known WQLS and associated pollutants that still require development of TMDLs. The submittal provides a discussion of priority ranking and identification of targeted waters where TMDL efforts are either currently underway or will soon commence. Also, MassDEP has explained the process that Massachusetts used to develop the 2010 list including specific details of how water quality assessments are conducted. The methodology describes sources of readily available water quality-related data and information used, as well as Massachusetts’ rationale for not using certain information to make §303(d) listing decisions. In this listing cycle, new assessments for the Chicopee, French, Quinebaug, and Nashua watersheds, and the Narragansett Bay and Mount Hope Bay coastal drainage areas were addressed.

Identification of Waters and Consideration of Existing and Readily Available Water Quality-Related Data and Information

EPA reviewed Massachusetts’ submission, and has concluded that Massachusetts developed its §303(d) list in compliance with §303(d) of the Act and 40 CFR §130.7. EPA’s review is based on its analysis of whether Massachusetts reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

Massachusetts generated the 2010 §303(d) list as a subset of its *Massachusetts Year 2010 Integrated List of Waters*. The Integrated List satisfies Massachusetts' obligation to report the status of water quality of Massachusetts water bodies as required by §305(b) of the Act. The Massachusetts 2010 Integrated List is comprised of five categories of waters that are consistent with the suggested categories in EPA's *2006 Integrated Water Quality Monitoring and Assessment Report Guidance*. As noted above, Category 5 of the 2010 Integrated List represents Massachusetts' 2010 §303(d) list and this is the category that EPA is approving.

Massachusetts developed the 2010 §303(d) list (Category 5) by updating the 2008 §303(d) list using all §305(b) water quality assessments that have been completed since the 2008 §303(d) list was published. Previously unlisted water bodies that were determined to be impaired for one or more uses were added to the 2010 §303(d) list unless data show that the impairment was not a result of a pollutant. Determinations of impairments were based on valid monitoring data and/or evaluative information that were collected and determined to be sufficient to make §303(d) listing judgments. Examples of waters that were listed based solely on evaluative information include most coastal segments where shellfish beds are closed for harvesting and waters where Rapid Biomonitoring Protocol (RBP) level II assessments indicate severe impairment.

All of the most recent §305(b) water quality assessments relied upon for the 2010 §303(d) list were used in the development of the Integrated List. The 2010 §303(d) list was updated to reflect new data and corrections made in 2010 to address any identified listing errors made during previous listing cycles.

In preparing the 2010 §303(d) list, Massachusetts used all existing and readily available water quality-related data and information including those sources identified in 40 CFR §130.7(b)(5): (i) most recent §305(b) report; (ii) dilution calculations and predictive models; (iii) water quality problems reported by local, state, or federal agencies; members of the public; or academic institutions; and (iv) §319 non-point source assessments. Massachusetts relied on these and additional sources of information (identified in the section of the Integrated List entitled, "General Approach to Assessing Massachusetts' Waters) to prepare the individual watershed assessment reports which together with the 2008 §303(d) list provide the basis for compiling the 2010 §303(d) list. Following is a brief description of the sources used by Massachusetts to prepare the 2010 §303(d) list including those sources identified in 40 CFR §130.7(b)(5).

Consistent with the 2006 EPA Integrated Listing guidance and subsequent supplemental listing guidance, the 2010 Integrated List represents an update of the 2008 submittal. Changes made between the 2008 and 2010 lists are based, primarily, on analyses of the most recent assessments completed for the Chicopee, French, Quinebaug and Nashua watersheds and the Narragansett Bay and Mount Hope Bay coastal drainage areas. Changes to waters in watersheds other than these are few in number and are documented in the Integrated List. A complete list of the MassDEP watershed assessments embodied in the 2010 categorization of waters can be found in the Bibliography attached to the Massachusetts Integrated List.

Appendix 2 of the Integrated Report identifies the segments and their associated impairments added to Categories 4a (impaired but for which a TMDL has been established) and 5 (impaired and for which a TMDL must be established), as well as segments and their associated impairments added to Category 4c (impairment resulting from pollution but not caused by a pollutant). The *additions* made to the Integrated Report result in the following changes between the 2008 and 2010 lists as follows:

Segments newly identified in the Integrated Report and added to Category 5	21
Segments moved from Category 2 to Category 5	5
Segments moved from Category 3 to Category 5	9
Segments moved from Category 4a to Category 5	2
Segments moved from Category 4c to Category 5	2
Segments in Category 5 with new impairments added (remaining in Category 5)	40
Segments with changes that do not impact Category 5	13

These additions outlined in Appendix 2 of the Integrated involve a total of 92 water body segments.

Appendix 3 of the Integrated Report identifies the segments and their associated impairments *removed* from Category 5, as well two segments and their associated impairments that also involve changes within Categories 4a and 4c. The segments and their associated impairments removed from the Integrated Report result in the following changes between the 2008 and 2010 lists as follows:

Segments moved from Category 5 to Category 2	11
Segments moved from Category 5 to Category 4a	87
Segments moved from Category 5 to Category 4c	1
Segments in Category 5 with impairments removed (remaining in Category 5)	69
Segments with changes that do not impact Category 5	2

The 167 waters and their associated impairments removed from Category 5 are outlined in Appendix 3 of the Integrated Report.

Appendix A of this approval document summarizes the reasons for EPA's approval of the 2010 changes made in the categorical listing of water body segments that were included on the 2008 impaired waters list (Category 5).

Most Recent Section 305(b) Report

The *Massachusetts Year 2010 Integrated List of Waters* represents Massachusetts' 2010 §305(b) report. As discussed above, the 2010 §303(d) list (Category 5) is a subset of the Integrated List. Therefore, all waters that Massachusetts has determined to be impaired or threatened because of pollutants and for which a TMDL has not yet been completed are included on the 2010 §303(d) list (Category 5).

Dilution Calculations and Predictive Models

The Integrated List discusses how Massachusetts considers the results of predictive models and dilution calculations in conducting use assessments. For example, Massachusetts uses dilution calculations to assess potential impairments resulting from effluent toxicity testing of point sources. Additionally, all waters which receive discharges from combined sewer overflows (CSOs) are automatically listed for pathogens even if water quality data are not available.

Water Quality Problems Reported by Local, State, or Federal Agencies; Members of the Public; or Academic Institutions

Massachusetts actively solicits external sources of information and water quality data to perform assessments. Sources of information used in developing the 2010 §303(d) list include federal agencies, state agencies, local governments, academic institutions, and watershed associations. The following partial list of sources illustrates that Massachusetts considered information from a variety of sources to identify waters on the 2010 §303(d) list.

1. Massachusetts Division of Marine Fisheries
2. Massachusetts Division of Fish and Game
3. Massachusetts DEP, Water Supply Program
4. Massachusetts DEP, Wetlands and Waterways program
5. Massachusetts DEP, Watershed Permitting Program
6. Massachusetts DEP, Wastewater Management Program
7. Massachusetts Office of Coastal Zone Management
8. Massachusetts Department of Conservation and Recreation
9. Massachusetts Department of Public Health
10. Massachusetts Water Resources Authority
11. U.S. Environmental Protection Agency
12. U.S. Geological Survey
13. U.S. Fish and Wildlife Service
14. National Oceanographic and Atmospheric Administration
15. Massachusetts Water Resources Research Center
16. Colleges, Universities and associated academic institutions
17. Watershed and lake associations
18. Citizen monitoring programs
19. Municipal Conservation Commissions (nonpoint source assessments)
20. NPDES Permit Monitoring Requirements
21. Municipal Facilities Plans
22. Environmental consultants

Water quality information obtained from these and other agencies or groups was considered in development of the 2010 §303(d) list. Typically the sources of data used for assessments are cited in the individual watershed assessment reports. However, MassDEP also relied on water

quality-related data and information that was submitted during the public comment period for the 2010 §303(d) list. In those cases where valid water quality-related data was provided during the public comment period and used as the basis for listing a water or pollutant on the final 2010 §303(d) list, the source of this information is identified in *Massachusetts Year 2010 Integrated List of Waters, Responses to Public Comments*.

EPA has reviewed Massachusetts' description of the data and information it considered, its methodology for identifying waters, and selected individual watershed assessment reports. EPA concludes that the Commonwealth properly assembled and evaluated all existing and readily available water quality-related data and information, including data and information relating to the categories of waters specified in 40 CFR §130.7(b)(5).

EPA specifically reviewed MassDEP's watershed reports that contained information to support the delisting of water body segment and/or impairments based upon new assessments. Those watershed reports addressed the Blackstone River, Boston Harbor, Cape Cod, Chicopee River, SuAsCo (Assabet River), French & Quinebaug River, Millers River, Narragansett and Mount Hope Bay, and Nashua River Watersheds.

In addition, the Commonwealth provided in its listing methodology its rationale for not relying on particular existing and readily available water quality-related data and information. In a relatively few cases, waters/pollutants were not added to the 2010 §303(d) list where some information might indicate a potential impairment but the information was determined to be insufficient for the purpose of listing on the §303(d) list. Massachusetts' rationale for not relying on available water quality-related data and information to support §303(d) listing decisions is based entirely on concerns with the quality of the data (i.e., either there was a lack of quality assurance/quality control (QA/QC) documentation provided or the information was incomplete).

Consistent with Massachusetts' concerns over the validity of water quality data, Massachusetts also considers anecdotal information to be insufficient for the purpose of listing water bodies or pollutants on the 2010 §303(d) list. All of the data and information are reviewed, but if information does not meet the Commonwealth's listing criteria, the water body is not included on the CWA §303(d) list. However, in cases where some data suggest that a water body may be impaired but where insufficient data and/or information exists to include the water body on the §303(d) list, the water body is placed in an "alert status," which signifies that a water body is targeted for specific monitoring and follow-up assessment during the next scheduled round of monitoring for the watershed as part of the Commonwealth's ongoing watershed assessment program.

For the 2010 list, Massachusetts analyzed relevant data and information for each water body that has been assessed since the 2008 §303(d) list was published and determined whether there were sufficient, reliable data to support listing. The Commonwealth's use of this listing methodology is reasonable and consistent with EPA's regulations. The regulations require states to "assemble and evaluate" all relevant water quality-related data and information and, as discussed above, Massachusetts did so for each of its assessed water bodies. The regulations permit states to decide to not use any particular data and information as a basis for listing, provided they have a

reasonable rationale in doing so. Massachusetts reviews all reasonably available data and information. Its decision to not rely on external data without adequate QA/QC documentation is reasonable, in light of the uncertainty about the reliability of such information.

EPA has reviewed the Commonwealth's rationale and has concluded that Massachusetts has reasonably used its discretion to screen unvalidated data and information. Massachusetts will continue to apply its existing analytical monitoring framework to target future monitoring activities to collect valid data and verify whether impairments exist.

Basis for Section 303(d) Delistings

Massachusetts has demonstrated, to EPA's satisfaction, good cause for not including on the 2010 § 303(d) list certain waters or impairments that had been identified on the 2008 §303(d) list. Massachusetts' §303(d) submittal describes the basis for removing water bodies from the §303(d) list. Massachusetts also provided an accounting and tracking of every water body and pollutant that was included on the 2008 list but not included on the 2010 §303(d) list. EPA reviewed this list and the Commonwealth's rationale for the delistings. Water body segments or impairments were removed from the list because (1) new water quality-related information indicates that the water body is in attainment with the relevant Water Quality Standards; (2) the cause of the impairment was determined to be not associated with a pollutant (e.g., related to flow alterations or exotic species); (3) TMDLs were completed and approved by EPA; or (4) corrections were made in 2010 to address any identified listing errors made during previous listing cycles. A total of 199 pollutant impairments were removed from the 2010 §303(d) list. One-hundred water body segments and their associated impairments were removed from the list and placed in a category other than Category 5 of the Integrated Report. Sixty-nine water body segments and their associated impairments were removed from the list and remain in Category 5 due to some other impairment. Appendix 3 of the Integrated List report indicates the impairments and water body segments removed between the final 2008 and final 2010 Integrated Lists.

Section 303(d) Delistings in 2010

One-hundred and ninety-nine pollutant impairments in 168 water body segments were removed from the 2010 §303(d) list for reasons discussed above. MassDEP completed revisions to the detailed watershed assessment reports for four major watersheds and two coastal drainage areas during this listing cycle. They are the Chicopee, French, Quinebaug and Nashua watersheds and the Narragansett Bay and Mount Hope Bay Coastal Drainage Areas. MassDEP references these and twenty-six other watershed assessment reports in the Integrated Report. The watershed assessment reports can be found on MassDEP's website at <http://www.mass.gov/dep/water/resources/wqassess.htm>. The watershed assessment reports present a summary of all existing and readily available data and information pertaining to a water body segment and, if sufficient information exists, a determination with regard to whether or not individual designated uses are supported. The detailed watershed reports and information provided by the public provided the bases for MassDEP's 2010 delistings. Massachusetts evaluated the new data and conducted use attainment assessments for these waters in accordance

with the approach used for all waters and outlined in the listing methodology. EPA agrees that MassDEP has demonstrated that delisting is appropriate for these segments and their associated impairments for the reasons outlined in the section above. Eleven of these segments were moved from Category 5 to Category 2. Eighty-seven segments were moved into Category 4a because the TMDL had been approved. One segment was moved into Category 4c because it was erroneously listed. Sixty-nine of the segments remain in Category 5. Despite attaining water quality standards for one or more listed pollutants, they remain impaired for additional pollutants for which one or more TMDLs are required. Massachusetts evaluated the new data and conducted use attainment assessments for these waters in accordance with the approach used for all waters and outlined in the listing methodology. These waters will continue to be reassessed during the MassDEP's five-year rotating basin schedule. EPA agrees that MassDEP has demonstrated that delisting is appropriate for these segments and associated impairments.

Change since the December 30, 2010 submission to EPA

MassDEP moved the Shawsheen River (83-08) out of Category 5 in 2010 for impairment due to "physical substrate habitat alterations," based on MassDEP's belief that such impairment is not associated with a pollutant and therefore should not appear on the 303(d) list. That is, MassDEP believed that placement of the segment in Category 5 in previous listing cycles was erroneous. However, after consultation with EPA Region 1, MassDEP has agreed that this segment should remain in Category 5 for the 2010 listing cycle because MassDEP did not provide sufficient justification to support the delisting at this time. Consequently, MassDEP has decided to retain the segment in Category 5 for 2010 and has amended its 2010 Integrated Report accordingly.

Approved TMDLs

Massachusetts has de-listed 121 pollutant impairments in 121 different water body segments for which TMDLs have been established and approved by EPA. Eighty-seven of these segments are identified in Category 4a. A TMDL has been completed for all the known pollutant impairments of those segments. Thirty-four of the segments are still impaired for other pollutants other than for the ones for which the TMDLs were developed. These segments remain in Category 5 because Massachusetts does not place any one segment into more than one category.

Administrative Changes

An additional group of water body segments are identified differently as a result of administrative changes made by Massachusetts during the development of the 2010 §303(d) list. Specifically, errors in the original listings were corrected for 22 water body segments as follows:

- (1) Four segments were moved from Category 5 to Category 2 because the original listing in Category 5 was inconsistent with assessment and listing methodology and should not have been listed;
- (2) One segment was moved from Category 5 to Category 2 based on public comment and review of additional data showing attainment;
- (3) One segment moved from Category 5 to Category 4c because it was erroneously listed;
- (4) Nine water body segments remaining in Category 5 had pollutant impairments removed based

on clerical errors; and

(5) Six segments remaining in Category 5 had pollutant impairments removed because the data did not support the original assessment.

Waters Nominated by the Public

During the public review period, a number of water bodies were nominated for inclusion on the 2010 §303(d) list. Massachusetts reviewed and considered all comments, as well as all water quality related information submitted by the public and any new fish consumption health advisories. Massachusetts has documented the public comments received and the Commonwealth's responses in *Massachusetts Year 2010 Integrated List of Waters, Responses to Public Comments Pertaining to the Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act*, dated December 2010.

As a result of the public comments, Massachusetts added six previously-unlisted water body segments to the 2010 §303(d) list. Unnamed Tributary (MA81-61) in the Nashua watershed, Ashley Brook (MA32-37), and Jack's Brook (MA32-39), were added to Category 5 based upon public comment and supporting data. Three new water body segments were also added to Category 5 based upon EPA comment and supporting data provided in EPA's Tri-Town chloride study. Those waters are Unnamed Tributary (MA92-26) in the Ipswich watershed, Fish Brook (MA84A-40), and Unnamed Tributary (MA83-20) in the Shawsheen watershed. New impairments were added to eight water body segments in response to public comment and supporting data. Seven of those were nominated by the public. They are Barton Cove (MA34122), Housatonic Lake (MA21-19_2006), Laurel Lake (MA21-057_2006), James Brook (MA81-20), Little River (MA32-08), Little River (MA32-36), and Potash Brook (MA32-32). Chloride was added as an impairment in the Unnamed Tributary (MA83-15_2008) in the Shawsheen watershed based on EPA's study and supporting data.

Massachusetts also decided to not list a number of water bodies and impairments/stressors that were nominated by members of the public. The rationales for not listing specific water bodies and impairments/stressors are provided in the MassDEP's *Responses to Public Comments* document. EPA has reviewed this document and has concluded that Massachusetts' decision not to include those water bodies identified by the public on the 2010 Integrated List is reasonable for the reasons discussed below.

Massachusetts' two primary reasons for not listing waters based on the information received are that (1) the external data submitted did not satisfy Massachusetts' submission requirements for using external data and/or (2) insufficient information was provided to confirm that an impairment exists and to support a §303(d) listing decision. Massachusetts' requirements for using external data are described in the listing methodology included in the draft list that was distributed for public review. The purpose of Massachusetts' requirements is to ensure that water quality-related information submitted from external sources is of sufficient quality to support listing decisions. In all cases where Massachusetts decided to not rely on external sources of information to list water bodies, the submitted information either did not provide the necessary quality assurance/quality control documentation that Massachusetts requires, or it was

not comprehensive enough to support listing (e.g., an insufficient number of samples).

EPA has reviewed Massachusetts' listing methodology which outlines the Commonwealth's requirements for using external data for §303(d) listing purposes. EPA believes it is appropriate for states to use discretion in establishing minimum requirements for accepting water quality-related data from external sources. Furthermore, EPA has concluded that it is reasonable to not list a water on the §303(d) list if the supporting information is not validated and it is uncertain whether the information is reflective of actual conditions. At the same time, we note that there are a number of watershed groups that are attempting to satisfy Massachusetts' listing criteria, and have even received MassDEP's approval of their sampling protocols, but have nevertheless failed to submit data that MassDEP felt it could rely on. EPA continues to strongly encourage MassDEP to continue its outreach to these organizations and clarify what exactly MassDEP needs in order to accept data for listing decision purposes.

Although MassDEP did not list all waters and/or impairments/stressors nominated by the public for inclusion on the §303(d) list, MassDEP did place water body segments in Category 3, which means there is insufficient data and/or information to make a use support determination. In addition, MassDEP identified some of water body segments with an "alert status" in response to concerns raised by the public. This means that the water bodies may be showing some indication of water quality impairment, but there is insufficient information to place the water body segment on the §303(d) list. For these water bodies, the "alert status" will signify during the next assessment process that there is a water quality issue that needs to be addressed. Identifying a water body in an "alert status" does not affect its listing status.

MassDEP received a comment from the Center for Biological Diversity ("CBD") suggesting that all ocean assessment units within the waters of Massachusetts should be listed as impaired or threatened for pH due to increasing acidification of ocean waters resulting from increased uptake of atmospheric carbon dioxide. MassDEP did not list any additional waters based on this comment due to insufficient data and information to support designating ocean waters of the Commonwealth as currently threatened or not supporting their designated uses. Specifically, MassDEP stated in its response to CBD's comments that there is an insufficient amount of data available from Massachusetts' marine waters to assess potential effects of ocean acidification. MassDEP also responded that the data and other information provided by CBD pertained to other regions of the world, not Massachusetts waters, and that it would be presumptive and inappropriate to extrapolate from those research results to Massachusetts waters given the complexity and site-specificity of variables affecting the quality of coastal and marine waters.

EPA shares the commenter's concerns about the growing body of evidence supporting the relationship between increased levels of atmospheric carbon dioxide and ocean acidification. However, the studies the commenter provided to EPA and to MassDEP during the public comment period do not include data that demonstrate water quality impairment in Massachusetts' ocean waters. In the absence of specific data showing either violations of the existing marine pH criteria or impairment of Massachusetts biota due to altered pH, EPA finds the Commonwealth's omission of ocean acidification from its 303(d) list to be appropriate.

As discussed in EPA's recent 2012 Listing Guidance related to Ocean Acidification (at http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/oa_memo_nov2010.cfm), EPA recommends that for future lists, States with marine waters (such as Massachusetts) include as part of their routine Integrated Report data request, a provision that solicits existing and readily available water quality-related data and information, including modeling and other non-site-specific data, for marine pH and natural background conditions¹

Section 319 Nonpoint Source Assessments

Massachusetts has properly listed waters with non-point sources that are causing, or are expected to cause, impairment consistent with §303(d) and EPA guidance. Section 303(d) lists are to include all water quality limited segments still needing TMDLs, regardless of whether the source of the impairment is a point and/or non-point source. EPA's long-standing interpretation is that §303(d) applies to waters impacted by point and/or non-point sources. In Pronsolino v. Marcus, the District Court for the Northern District of California held that §303(d) of the Clean Water Act authorizes EPA to identify and establish total maximum daily loads for waters impaired by non-point sources. Pronsolino v. Marcus, 91 F. Supp. 2d 1337, 1347 (N.D.Ca. 2000). This decision was affirmed by the 9th Circuit court of appeals in Pronsolino v. Natri, 291 F.3d 1123 (9th Cir. 2002), cert. denied, 123 S. Ct. 2573 (2003). See also EPA's 2006 Integrated Reporting Guidance.

In the development of the 2010 §303(d) list, waters identified by the Commonwealth as impaired or threatened in non-point assessments performed by the Commonwealth, in accordance with §319 of the CWA, were included on the §303(d) list. The Commonwealth properly listed waters with non-point sources causing or expected to cause impairment, consistent with §303(d) and EPA guidance.

Massachusetts considered its NPS Assessment Report (1989) submitted to EPA in accordance with §319 of the CWA, in the development of its 1992 §303(d) list. All waters identified as having potential water quality problems resulting from NPS pollution were included on the 1992 §305(b) list of impaired and threatened waters and subsequently on the 1992 §303(d) list. Most of these assessments were based on very little information, and in many cases on no water quality monitoring data at all.

These waters were then carried forward in the development of the 1994, 1996, 1998, 2002, 2004, 2006, and 2008 §303(d) lists unless new monitoring data indicated the water/pollutant was in attainment with water quality standards. NPS impaired waters remaining on the 2008 §303(d) list were again carried forward to the 2010 §303(d) list unless (1) new monitoring data indicated

¹ CBD also suggested that Massachusetts' pH water quality standard is inadequate to protect marine fauna and flora in light of the most recent information on ocean acidification. Currently, Massachusetts' pH criteria are approved by EPA. In its response to CBD's comment, MassDEP indicated that it would consider revising its pH standard if EPA determined that a revision should be made to the national marine pH criterion for aquatic life. However, after reviewing a wide range of information received in response to a Notice of Data Availability (NODA) on Ocean Acidification and Marine pH Water Quality Criteria, on April 15, 2010, EPA decided against revising the national marine pH criterion for aquatic life due to insufficient data.

the water/pollutant was in attainment with water quality standards or (2) it was determined that the cause of the impairment was not due to a pollutant.

Priority Ranking and Targeted Waters

EPA has also reviewed the Commonwealth's priority ranking of listed waters for TMDL development, and concludes that the Commonwealth properly took into account the severity of pollution and the uses to be made of such waters. The regulations at 40 CFR §130.7(b)(4) require states to prioritize waters on their §303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development in the next two years. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See CWA §303(d)(1)(A). As long as these factors are taken into account, the CWA provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities. See 57 Fed. Reg. 33040, 33044-45 (July 24, 1992).

Targeted Waters

The 2010 §303(d) submission identifies several targeted water bodies where TMDL work is either ongoing or planned for the near future (see pages 23-24 of the Integrated List). These include the continued development of TMDLs for nutrients in estuaries in Southeastern Massachusetts and TMDLs for bacteria by watershed throughout the Commonwealth. In addition, several more TMDL and monitoring projects in support of TMDL development are set out on page 25 on the Integrated Report and in MassDEP's Work Plan under "Restore Degraded Water Quality" at: <http://mass.gov/dep/water/priorities/ssgwhome.htm#restore>. Waters targeted for TMDL development during the next 2 years reflect a variety of serious water quality problems affecting various designated uses. For many of the targeted waters the public has expressed its interest for the Commonwealth to begin TMDL development.

Priority Rankings

Massachusetts has established priorities for TMDL development for all listed waters, presented within the context of its watershed approach and the five-year rotating basin schedule. The initial TMDL prioritization is also linked to the type of pollutant/impairment. Under the Commonwealth's watershed approach, the goal is to adhere to the following schedule for a given watershed:

- Year 1 - Information gathering/ reconnaissance
- Year 2 - Information development/monitoring
- Year 3 - Assessment/ Development of TMDLs
- Year 4 - Implement control actions
- Year 5 - Evaluate control actions

In order to set priorities for TMDL development MassDEP evaluated the causes and locations of impairments across the Commonwealth. The data on causes of impairments in assessed waters taken from the 2010 Integrated Report overwhelmingly indicated that the major causes of impairment are excess nutrients and pathogens. Excess nutrients and their associated effects, such as low dissolved oxygen and noxious aquatic plants, were identified as the cause of impairment in approximately 50% of the Commonwealth's assessed waters. The biggest single cause of impairment was found to be pathogens, which was identified as a problem in roughly 24% of the Commonwealth's assessed waters. The Commonwealth's *Environmental Progress Report – Surface & Groundwater FY2010*

<http://www.mass.gov/dep/water/priorities/sggwhome.htm#restore> indicates that these two causes still account for roughly 74% of the impairments in Massachusetts. As a result, Massachusetts has placed, and will continue to place, a high priority on these issues for TMDL development in the coming years.

In conclusion, EPA finds the TMDL prioritization and targeting approach used by Massachusetts to be reasonable considering all factors including the large number of waters on the list and the overall pace at which TMDLs will be developed. See EPA's May 5, 2009 memorandum on *Information Concerning 2010 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions*. Massachusetts' watershed approach provides watershed-based priority rankings for §303(d) listed waters. In addition, it provides a framework in which meaningful priority rankings will be established for each of the listed water body segments. In targeting water bodies for TMDL development, Massachusetts continues to take into account the severity of the pollution and the uses to be made of such waters. Consistent with EPA's regulation (40 CFR §130.7(b)(4)), Massachusetts did identify the segments targeted for TMDL development in the next two years. EPA expects that individual priority rankings, set in year 3 of the rotating basin schedule, will be reflected in subsequent §303(d) lists.

Any other reasonable information requested by the Regional Administrator

Massachusetts has been responsive to the questions and comments raised by EPA - New England during the development and review of the 2010 §303(d) list.

Water Bodies on Tribal Lands

EPA's approval of Massachusetts' 2010 §303(d) list extends to all water bodies on the list with the exception of those waters, if any, that are within Indian Country, as defined in 18 U.S.C. §1151. EPA is taking no action to approve or disapprove the Commonwealth's list with respect to those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under §303(d) for those waters.